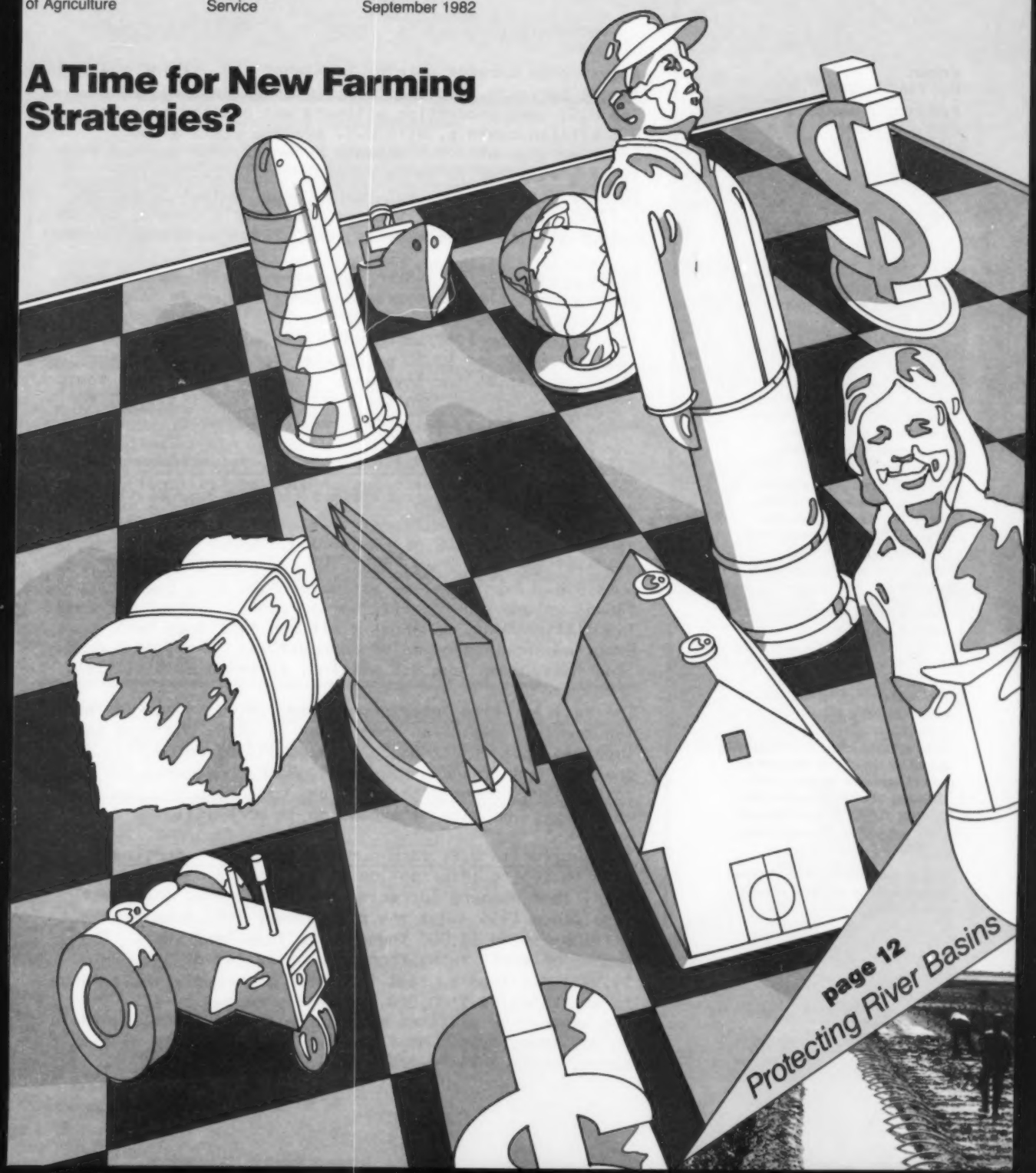
FARMLINE

United States Department of Agriculture

Economic Research Service

Volume III
Number 8
September 1982

A Time for New Farming Strategies?



page 12
Protecting River Basins

Editor:
Eric Van Chantfort

Editorial Assistant:
Martha R. Evans

(202) 447-8915

Contents of this magazine may be reprinted without permission.

FARMLINE is published 11 times a year by USDA's Economic Research Service. Subscription price is $16 a year to U.S. addresses ($20 foreign). Order from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Ask for *FARMLINE* and make checks payable to Superintendent of Documents. For faster service, call (202) 783-3238 and charge your subscription to your Visa, MasterCard, or GPO Deposit Account.

Address single copy requests and editorial correspondence to *FARMLINE*, Room 400 GHI Bldg., USDA, Washington, D.C. 20250.

The Secretary of Agriculture has determined that publication of this periodical is necessary in the transaction of public business required by law of this Department. Use of funds for printing *FARMLINE* has been approved by the Director of the Office of Management and Budget through March 31, 1987.

Use of commercial or trade names does not imply approval or constitute endorsement by USDA.

PERSPECTIVES

August crop surveys pointed to higher U.S. yields and larger harvests than previous forecasts had suggested. The U.S. corn production estimate was boosted to a record 8.3 billion bushels, with U.S. average yield at an all-time high of 113.9 bushels an acre. The soybean crop is also expected to set a record--nearly 2.3 billion bushels, up 13% from last year. Wheat output is put at 2.77 billion bushels, 1% below last year's record; cotton output at 11.1 million bales, down 29% from 1981.

Price prospects for 1982 crops weakened with recent projections, despite some trouble spots for world harvests. Analysts say there's now a strong possibility that U.S. farm prices for 1982/83 may average below estimated 1981/82 levels of $2.50 per bushel for corn, $3.65 for wheat, and $6.05 for soybeans. Consider, too, that these 1981/82 prices are down sharply from 1980/81's $3.11 for corn, $3.91 for wheat, and $7.57 for soybeans.

U.S. export volume still record high, value lower . . . USDA now forecasts the value of U.S. agricultural exports at about $40.5 billion this fiscal year. That's down 8% or $3.3 billion from fiscal 1981. It's also the first decline in export value since 1969. Lower crop prices, a stagnant world economy, and a strong U.S. dollar are responsible. Export volume estimates have also been lowered, though volume should still set a record. Latest forecast: 165 million tons, up about 2 million tons from last year. Expected showings of major commodities: wheat up 4.6 million tons, corn down 6.7 million, soybeans up 5 million.

The July 1 cattle inventory dropped 1%, halting--for now--the cyclical expansion that began in 1980. Returns have improved, but many producers may still be recovering from the previous financial squeeze. Pork producers, too, seem to be using recent profits to pay off debts and improve cash flow. No sign of expansion in pork yet.

The decline in U.S. farm numbers apparently continues, despite 1981's interruption of the downward trend. Last year, farm numbers increased by 6,000 units, the first rise since 1935. But the preliminary 1982 count--at 2.4 million--found 34,000 fewer farms than last year. The number of small farms (gross annual sales of $1,000-$9,999) declined by less than half a percent, while large farms (sales of $100,000 and up) increased by 4%. The big squeeze is still on midsize units ($10,000-$99,999 in sales)--down 4.6%. Small farms now make up 51% of all farms, midsize farms 36%, and large farms 13%.

FARMLINE

Volume III
Number 8

September 1982

FEATURES

A Time for New Farming Strategies? *by Eric Van Chantfort* 4

We're in a new economic environment, at least for the time being, says agricultural economist Paul Prentice. According to Prentice, producers must recognize that the rules of the game have changed, with the result that the winning farm management strategies of the 1970's may be the losing strategies of the early 1980's.

Farmland Values Take a Downward Turn *by Daniel R. Williamson* 6

Low net farm incomes and high interest rates are a double blow to the farm real estate market, says economist Ron Jeremias. The average value of U.S. farmland declined 1 percent in USDA's latest survey year, and the downturn seems to be continuing in the Midwest. Relatively few farmers are losing their land, but more are struggling—or working with lenders—to keep afloat.

Mixed Prospects for Meeting World Food Needs *by Sherrie Meyer* 8

Food supplies in the low-income nations may improve over the next 12 months, if world harvests are as large as forecasters expect. However, as economist Kevin Lanagan points out, the outlook varies considerably. Among many of the neediest countries, reduced export earnings will increase dependence on food aid at the same time that the aid budgets of donor nations are tight.

River Basin Team Maps Out Erosion Control Options *by William Heneberry* 12

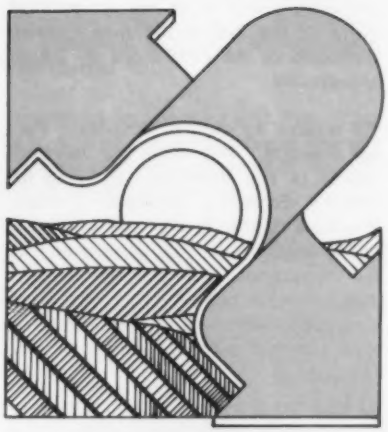
If $365 million seems a high price to pay for keeping the soil in place in Idaho's Middle Snake River Basin, benefits over the next two decades should yield a net positive return of about $33 million a year. That's the bottom line assessment of ERS economists in a cooperative USDA program that offers erosion control expertise to state and local governments.

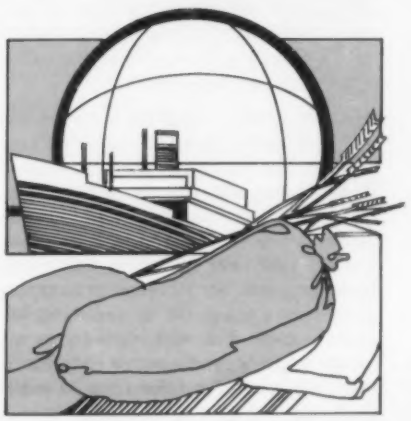
DEPARTMENTS

Perspectives: Late-Breaking Agricultural News and Analysis 2

Agricultural Roundup: Farm Population Profile; Back to Bartering 11

Farmline Trends: Monthly Price Monitor 15





A Time for New Farming Strategies?

We're in a new economic environment, and producers must recognize that many of the successful management strategies of the 1970's are no longer appropriate.

So says agricultural economist Paul Prentice, who analyzes developments in the national economy for USDA's Economic Research Service. Prentice contends that the new economic environment has implications for the investment, cash flow, and day-to-day financial decisions of just about everyone—farmers and ranchers as well as most business managers and families.

"It took a few years for people to wake up to high inflation and to develop the appropriate economic survival strategies," he says. "Likewise, it will take awhile for people to fully adjust to more recent economic conditions."

Prentice points out that we have moved from a period of rising inflation into one of reduced inflation; from relatively loose money with low interest rates to tight money with currently high interest rates; from fairly steady economic growth and real (inflation-adjusted) gains in consumer incomes to sluggish growth and stagnant to declining incomes. Even if a mild recovery is already underway, as some indicators suggest, changes take time to work their way through the economy.

According to Prentice, the bottom line for farmers and ranchers is the recognition that the rules of the game have changed, at least for the time being. One result is that the winning management strategies of the 1970's may be the losing strategies of the early 1980's.

"Many farmers who borrowed heavily, expanded rapidly, and hoped to pay back their debts in cheaper, inflated dollars are now in the worst position," Prentice says.

"They followed a strategy that seemed appropriate at the time, but it assumed continued increases in real asset values. Instead, we're now seeing an erosion in farmland values." (See related article on page 6.)

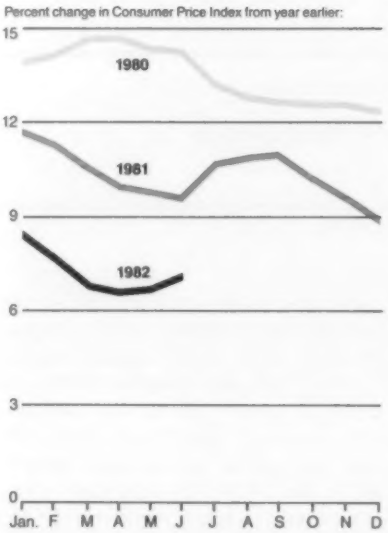
Winners and Losers

While cautioning that his generalizations ignore such key factors as farm type and location, Prentice identifies a management style that characterizes those who may be in the best position to face current economic conditions.

"The winners are likely to be the ones who maintained low debt burdens, low external financing requirements, a low cost structure, and an operation geared to maximizing efficiency rather than volume."

In many cases, this will be those who bucked the trend to increased size and specialization. For example, mixed crop-livestock farms have an advantage, Prentice says, because they don't have to buy feed on the market. Even though feed costs are pretty low now, self-sufficiency is a big edge when cash flow is so tight.

Lower Inflation Rate May Herald a New Economic Environment



As far as size is concerned, Prentice contends that some of the greatest strength will be found on midsize farms, which often show the highest efficiency.

"Many of the large, expansion farms that adapted well to the financial environment of the 1970's are not physically efficient, and some will be forced to retrench," he says.

"The efficient managers are the ones who carefully watch costs, never wasting anything, even to turning down the idle of their tractors. They're the farmers who are conservation oriented, who maintain good physical productivity by protecting their topsoil."

Prentice points out that much of the crop expansion of the 1970's took place on marginal land. The idea was to expand to the limits, even if that meant using up the soil and making up for it by adding inputs.

"Well, that works, it can boost returns, if you can afford the inputs. Today, many can't," he says.

Where Is It All Leading?

Current policies have already shown some success in reducing the core rate of inflation in the economy, Prentice says. Inflation was running at about a 7-percent annual rate in the first 6 months of 1982, compared with the peak rate of 13 percent in 1980.

The slower rate is showing up in the prices of farm production inputs. USDA's index of prices paid by farmers rose only 4 percent from June 1981 to June 1982. In the 3 previous years, the rises were 9 percent, 11 percent, and 13 percent.

Under the most optimistic outlook—a sharp, long-term cut in the inflation rate and a strong, sustained economic recovery—agriculture could be sitting pretty in years ahead.

"Farmers would be able to take advantage of strong demand in a low inflation environment. They wouldn't have to spend so much time and energy coping

with inflation, and they could get down to the business of farming again."

But, as Prentice points out, the adjustment process is not yet over, and the road is fraught with uncertainties. According to some economists, one dilemma is that if we pursue the monetary and fiscal policies that may be necessary to achieve a more lasting impact on inflation, economic recovery could be weakened or delayed.

For agriculture, the situation is even more complicated. Recovery or not, farmers are saddled with large crop inventories that must be worked off before prices will show any strong comeback.

"Now, farmers have the worst of both worlds—weak demand and huge supplies," Prentice says.

"The only thing that could quickly bail us out is a crop shortfall in the rest of the world. Beyond that, the best hope is in sustained economic recovery here and abroad." □

[Based on an interview with Paul Prentice, an agricultural economist with the National Economics Division of the Economic Research Service.]

"That's the Way the Economy Works"

Current economic conditions didn't develop overnight.

"We've been in a recessionary period for 2 or 3 years, really dating back to 1979," says economist Paul Prentice. In the spring of 1979, we had the oil price shock, and then in the fall the Federal Reserve Board adopted its anti-inflation, tight money policy.

"The decision not to continue inflating the economy to pay higher oil prices led to an unavoidable transfer of real wealth from the United States to the oil exporters. Similarly, the decision not to expand the money supply to finance wage increases in excess of productivity growth led to 3 years of economic stagnation and high unemployment."

The anticipated payoff, a sharp reduction in the inflation rate, didn't start to show up till this past March, when the Consumer Price Index fell 0.3 percent, the first monthly decline since August 1965.

Why did it take so long?

"That's the way the economy works," Prentice says. He explains that our economy is not perfectly competitive. If it were, wages and prices would adjust quickly to the tight monetary policy that's being used to curb inflation.

Instead, he says, we have a lot of wage and price rigidity because of inflationary expectations, long-term labor contracts, and other economic factors. Wages and prices adjust slowly, sluggishly in response to market signals. As a result, manufacturers, food processors, and other businesses have to react by reducing inventories and production. This leads to higher unemployment and weak demand.

Agriculture is one of the most competitive sectors of the economy, but it depends on the nonfarm economy for credit and most farm production inputs. It also depends on economic growth here and abroad to stimulate demand for farm products.

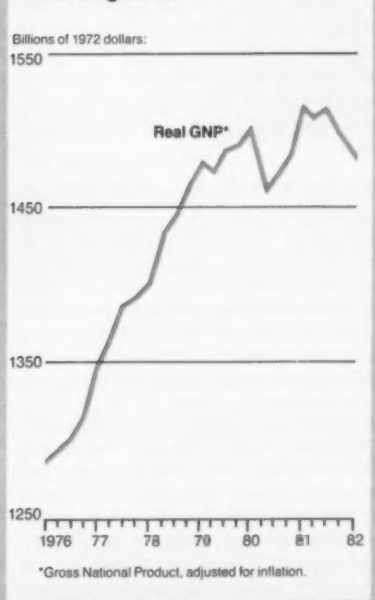
"High interest rates not only cost farmers directly, but they also choke off economic growth. Because the price structure is fairly rigid through most of the economy, the shocks of demand weakness are first absorbed by raw product prices, such as farm goods."

Meanwhile, the rest of the industrialized world is also trying to bring down inflation, thus weakening foreign demand. Likewise, the strong U.S. dollar, reflecting lower inflation and high interest rates here, has made our exports more costly to foreign buyers.

Other industries have responded to economic conditions by closing plants and laying off workers, but farmers have fewer options.

In addition, buyers here and overseas have cut operating costs by maintaining low inventories, meaning less product in the pipeline at a time of abundant supplies. This has put a further damper on crop prices, while passing the burden of holding large stocks to farmers.

U.S. Economy Suffering from 3-Year Stagnation



*Gross National Product, adjusted for inflation.

Farmland Values Take a Downward Turn

The average value of U.S. farmland declined 1 percent from February 1981 to April 1982, according to the latest USDA survey.

On a per acre basis, average value slipped from $795 to $788 in that period, following a 16-percent increase in 1979 and a 9-percent gain in 1980.

Although average farmland value dropped only 1 percent, the Consumer Price Index (CPI) gained about 8 percent, so the real value of farmland declined by roughly 9 percent.

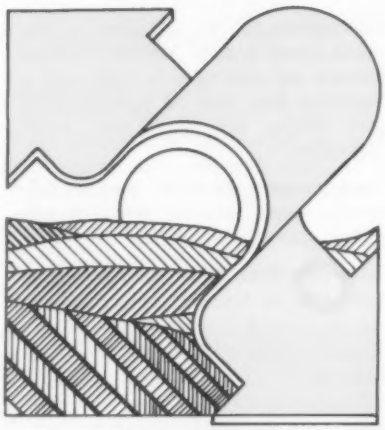
The decline appears to be continuing, at least in the Midwest, according to preliminary indications from a July survey conducted by the Federal Reserve Bank of Chicago.

During the 1970's, land value gains exceeded CPI increases by an average of 6 percentage points annually. In 1980, land values increased 9 percent, while the CPI rose by 11 percent.

"The primary causes of the declining land market are low net farm income and high interest rates," says economist Ron Jeremias of USDA's Economic Research Service. "Real net farm income (adjusted for inflation) dropped 43 percent from 1979 to 1980. We saw some improvement in 1981, but real farm income was still 35 percent less than in 1979."

Mortgage interest rates have risen as income has declined. Federal Land Banks (FLB's), which supplied 37 percent of all credit given to farm buyers last year, increased their rates an average of 1 percentage point per year, from 8.3 to 12.2 percent, between 1978 and 1982. FLB rates are generally lower than those of other lending institutions.

Of course, farmers aren't the only Americans to see land and real estate values slipping. High interest rates and general economic stagnation that began in 1979 are having similar effects on the markets for residential land and on housing. Residential land values dropped 2 percent last year, while the price index for new single-family homes increased only 6 percent—less than the increase in the CPI.



Low farm income and high interest rates are a double blow to the farm real estate market.

Impact of Farm Economy

Farmland values are affected by both the general economy and the farm economy. About two-thirds of all farmland buyers are other farm operators, so low farm income and high interest rates are a double blow to the farm real estate market. Prospective buyers simply don't have the cash or willingness to finance purchases at today's high interest rates.

At the same time, falling land values mean that farmers seeking loans to buy additional land—or to ease financial pressures—have lower collateral value against which they can borrow.

As a result, land that goes on the market draws few bidders. A "buyers' market" evolves, keeping prices down.

Jeremias is quick to point out that farmland value changes vary greatly from area to area. While values fell 15 percent in Ohio and 13 percent in Indiana, they shot up 17 percent in Texas and 10 percent in California and West Virginia.

"The real value of Corn Belt farmland has declined an average of about 19 percent over the last two years," Jeremias notes. "Real (inflation-adjusted) farmland values in the remainder of the U.S. have declined an average of 5 percent over the same period."

Why is there such variation? Much depends on farm prices for crops or livestock produced in a given state.

Corn Belt farmers saw corn and soybean prices drop 21 and 18 percent, respectively, from February 1981 to April 1982. Cattle prices, on the other hand, strengthened during the first several months of 1982, helping to support land values in certain states that depend on cattle for a large percentage of total cash receipts.

Thus, a farm going on the market in a grain-producing area where potential buyers aren't willing or able to expand may sell for less than it would a year earlier. Meanwhile, if a ranch goes up for sale in a California county where prices are improving, it may be worth more than it was a year ago.

Jeremias stresses that nonfarm factors also come into play. In Texas and Oklahoma, for example, farmland is in strong demand for recreation, urban development, and for mineral rights.

Given this overall short-term picture, the rate of voluntary farmland transfers fell from an average of 3 percent of all farmland during the 1970's to less than 2.5 percent in 1980 and 1981. A further drop is believed to have occurred this year.

"Landowners are reluctant to sell at prices which are not much different from those that could have been obtained one or two years ago," Jeremias says. "Bid and asking prices are often far apart. Many auction sales are being aborted because bids are lower than the minimums that sellers are willing to accept."

Forced Sales Increase

Although voluntary sales have dropped, forced sales appear to be increasing. The Federal Reserve Bank of Chicago found in a January survey that bankers in its district expected about 3 percent of farmers in their region to consider selling off capital assets during the first half of this year. This compares with a normal rate of 1 percent who must consider the sale of some assets because of financial problems.

More farmers appear to be struggling to keep up loan payments. On March 31, 1982, about 3.9 percent of all Production Credit Association (PCA) loans were delinquent, compared with 2.4 percent a year earlier. For FLB loans, the delinquency rate rose from 2.7 percent to 3.3 percent.

Despite recent setbacks, most farmers are still far from the bottom of their reserves. FmHA services farmers who can't obtain credit elsewhere, yet it reports that it foreclosed on fewer than a fourth of 1 percent of its borrowers between October 1981 and June 1982. Economists say that current low foreclosure rates indicate that, despite tight conditions, relatively few farmers are going under.

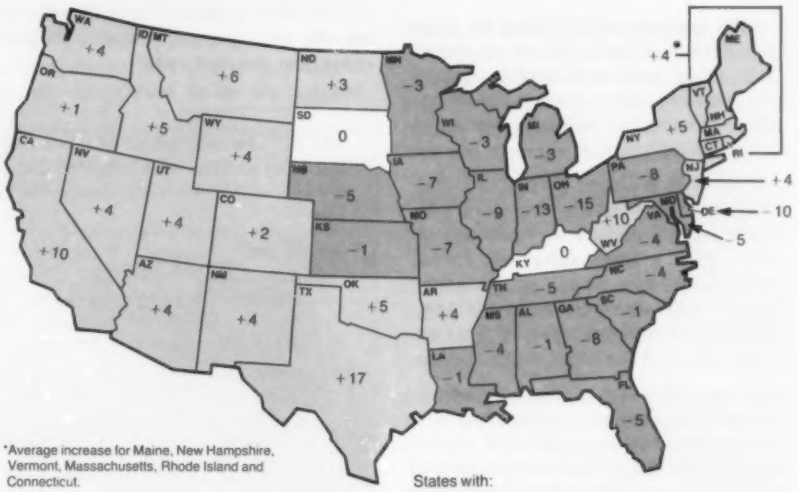
"Many farmers are overburdened with debt, but they are far from a majority," Jeremias says. Overall, farm debts amount to only about 18 percent of the value of farm sector assets.

Most lenders are reluctant to foreclose because of the expense and trouble, and because rural lenders often have personal ties with the farmers who are struggling. Instead, USDA economist George Amols notes that loan renewals and extensions are up, and lenders are reportedly working more closely with farmers to help tighten their financial management.

"The number of farmers requiring such assistance is about double that under normal conditions," he estimates, "and lenders are paying closer attention to the quality of their loan portfolios."

Farmland Value Changes Varied Greatly Among the States

Percent change in average value of farm real estate per acre, February 1981-April 1982:



*Average increase for Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.

States with:

Farmland value increases

Farmland value declines

Keeping Farms Afloat

In other words, lenders and farmers are working together to keep farms afloat until the present crunch eases. Based on historical trends, a return to more normal rates of farmland appreciation is well worth waiting for.

During the 1970's, the average value of U.S. farmland increased 14 percent per year. In fact, even after adjusting for inflation, the average annual gain was 6 percent. By outpacing inflation, farmland attracted investors from outside the farm sector who, in turn, bid up farmland prices still higher.

Souring economic conditions tarnished farmland's investment glow in 1980, as the inflation rate exceeded the gain in nominal farmland value by 2 percent, signaling the beginning of the current period of sagging land prices.

So, when will farmland values take off again, leaving the inflation rate behind? USDA economist Linwood Hoffman says that farmland values are likely to decline or stabilize in the year ending next April. This is based, he says, on expected agricultural production and the performance of the international, U.S., and farm economies.

However, for the longer run, he's convinced that farmland values will return to the growth path, though he declines to predict when this will occur.

"There are too many uncertainties," he says. "Major factors affecting land values are buyer and seller expectations of net farm income, farmers' debt-equity position, mortgage interest rates, conditions in the general economy, and expected returns from alternative investments." □

[*Based on special material provided by Ron Jeremias and other economists of the National Economics Division, Economic Research Service.*]

Mixed Prospects for Meeting World Food Needs

Food supplies in the low-income countries of Asia, Africa, and Latin America should improve over the next 12 months.

If world harvests are as large as most forecasters expect, these countries could, in all likelihood, slightly reduce their food imports and still maintain per capita consumption at levels reached in recent years.

According to a report by USDA's Economic Research Service, the world's 69 lowest income nations may produce almost 254 million tons of cereal grains—wheat, rice, and coarse grains—between now and next July. That's up about 7 percent from their average output of the last 4 years.

With somewhat larger crops, their cereal import needs may drop slightly. While it's too early to forecast their actual imports, current estimates indicate that they would need about 32 million tons in commercial imports and food aid to keep up with recent consumption trends. During the last year, their imports reached 33 million tons, the sixth consecutive record high.

Unfortunately, this mildly optimistic outlook doesn't apply across the board for all low-income countries. Those that are fairly financially secure—Jordan, Indonesia, Pakistan, Syria, and Tunisia, for example—will earn enough foreign exchange to purchase the food they need.

However, the recession in the world economy and weak prices for the raw commodities exported by low-income nations have put a strain on the neediest countries—Chad, Haiti, Laos, and Somalia, to name but a few. As a result, much of the poorest countries' share of the 32 million tons will have to take the form of food aid—donations and concessional sales. According to the report, they will need 12 million tons of food aid to maintain "status quo" food intake (an average of actual intake levels during 1978–81).

"It is unlikely that all 12 million tons will be supplied," says ERS economist Kevin Lanagan. "Only about 9 million tons of cereal and 500,000 to 600,000 tons of other products, such as vegetable oils and milk, will probably be provided over the next year."

These figures suggest that food aid contributions will be the lowest since July 1975–June 1976, when aid was a little over 7 million tons.

"Of the 9 million tons, as much as 15 percent could go to some of the higher income or developed countries, such as

The 69 Low Income Countries: Ranked According to the Relative Severity of Their 1982/83 Per Capita Food Aid Needs[1]

Country	Rank	Country	Rank
Africa and Middle East		Sudan	49
		Swaziland	7
Angola	45	Syria	67
Benin	55	Tanzania	13
Burundi	51	Togo	54
Cameroon	47	Tunisia	56
Cape Verde	6	Uganda	43
Central African Republic	33	Upper Volta	41
		North Yemen	10
Chad	5	South Yemen	57
Comoros	4	Zaire	52
Congo	64	Zambia	58
Djibouti	3		
Egypt	9	**Asia**	
Equatorial Guinea	26	Afghanistan	23
Ethiopia	46	Bangladesh	28
Gambia	66	India	44
Ghana	31	Indonesia	63
Guinea	30	Kampuchea	50
Guinea-Bissau	22	Laos	17
Israel	69	Pakistan	62
Jordan	68	Philippines	48
Kenya	16	Sri Lanka	21
Lebanon	27	Vietnam	25
Lesotho	2		
Liberia	15	**Latin America**	
Madagascar	53	Bolivia	24
Malawi	32	Colombia	42
Mali	18	Costa Rica	36
Mauritania	14	Dominican Republic	61
Mauritius	59	Ecuador	39
Morocco	37	El Salvador	12
Mozambique	20	Guatemala	40
Niger	11	Haiti	8
Rwanda	35	Honduras	19
Senegal	34	Jamaica	29
Sierra Leone	38	Nicaragua	65
Somalia	1	Peru	60

[1] Based on maintaining status quo consumption levels.

Poland. Realistically, this leaves about 7.7 million tons available for the poorest countries," Lanagan says.

If the aid isn't provided, these countries will have to channel money from other necessities into food purchases. If this isn't possible, some of the population will go without food.

"In any case, to get the full picture of food imports and aid, you need to examine the outlook on a regional and country-by-country basis," Lanagan stresses.

Large Needs for Asia

Food needs will likely continue large for much of Asia for the next 12 months or more. A total of 8.1 million tons of cereal imports, including 5.5 million in aid, will probably be needed to keep up current food intake and minimum stocks in the region.

South Asia's cereal import needs are forecast at over 5 million tons, compared with actual imports of 4.5 million in the past year. Almost 4 out of the 5 million would have to be food aid.

Among the South Asian nations needing food aid, Bangladesh will join India and Sri Lanka in requiring over 1 million tons of cereal each to maintain recent consumption levels. In India, a mounting 1982 trade deficit, which cuts into the ability to buy food, is raising aid needs.

The outlook is better for the East Asian countries of Indonesia and the Philippines. For these two, total cereal import requirements could drop from 3 million tons last year to 1 million over the next 12 months. All the food aid needs—56,000 tons—will be in the Philippines, because Indonesia had a bumper rice crop.

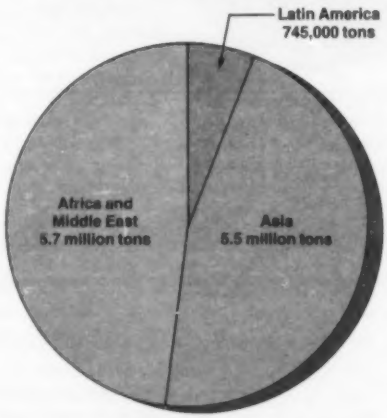
Latin American Situation Worsens

Deteriorating economies and civil unrest are pushing up Latin America's commercial import and food aid needs. El Salvador, Bolivia, Colombia, and Haiti are among the hardest hit.

In Bolivia and Colombia, population growth will boost cereal aid needs to 92,000 and 113,000 tons, respectively. Haiti—the poorest country in the Western Hemisphere—will need over 200,000 tons of aid.

In El Salvador, this year's food output slipped 25 percent below the amount produced before the 1979 civil war. And with a population that is growing 3 percent a year, El Salvador is falling even further behind.

Food Aid Needs Are Concentrated in the Developing Nations of Africa and Asia



Projected food aid needs to maintain status quo consumption levels, July 1982-June 1983.

African Outlook Slightly Better

Looking at the region as a whole, Africa and the Middle East may be slightly better off than last year. Some relief is expected from last year's drought in northern and eastern Africa. Nevertheless, food imports will continue to grow as Africa tries to rebuild stocks and make up for the hard times, according to Lanagan.

On the whole, the region will need to import almost 20 million tons of cereal this year, slightly more than during the previous 12 months.

On the other hand, food aid needs will drop somewhat because of the increased financial capacity of a few major importers. The region will need about 5.7 million tons of cereal aid to cover its "status quo" requirements, compared with 7 million a year earlier.

Of the 5.7 million, the Middle East will need only 350,000 tons, all of which will go to Lebanon and North Yemen.

Who Will Help?

For all of the low-income countries, the needs are high. But will the aid be there?

Adequate Diets Are Another Story

Although food imports needed to maintain current consumption levels in the 69 low-income countries may drop slightly during the next year, this is only one side of the picture.

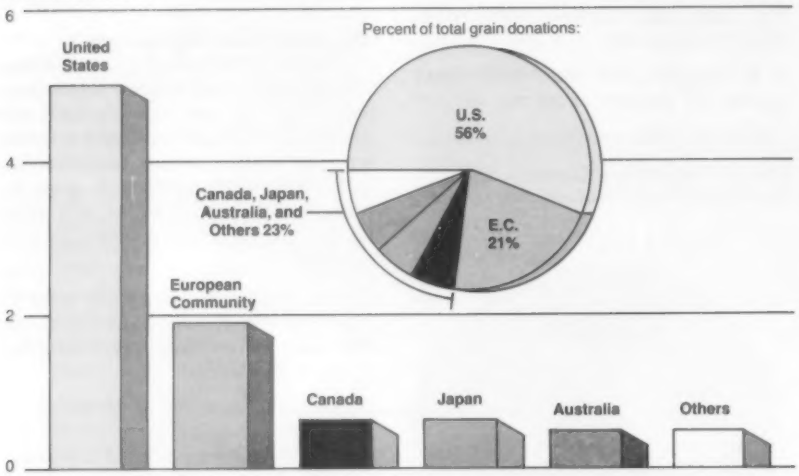
For the poorer countries, there's a big difference between matching "status quo" consumption levels and raising deficient diets to minimum nutritional standards.

In addition to the 32 million tons of cereal imports needed to fulfill the "status quo" needs of these countries, over 20 million tons more would be required, according to the analysts, to raise diets to the nutritional minimum recommended by the United Nations—2,100 to 2,400 calories per person per day.

Thus, to meet nutritional minimums, total food needs from outside sources rise to 52 million tons, and more than 30 million of this would have to be in the form of food aid.

The United States Remains the Largest Food Aid Donor

Expected grain allocations for 1982/83 food aid, in million metric tons:



"In a time of contracting economies throughout the developed world, food aid budgets in donor countries will likely decrease marginally from last year's level," Lanagan says. "However, large supplies and weaker demand should keep commodity prices low enough to prevent the volume of food aid from shrinking even further."

The U.S. donates agricultural products and extends long-term, low-cost credit for purchases through Public Law 480 and the Agency for International Development.

In fiscal 1981, the U.S. volume of food donated and sold under credit—slightly less than 6 million tons—declined for the fourth consecutive year, but it still accounted for more than half of the world aid total. According to Lanagan, a 10 percent decrease is possible this year. However, any decline in fiscal 1983 will probably be smaller.

Large crops and surpluses will enable the European Community (EC), Canada, and Australia to keep their aid commitments for the next 2 years. Even so, their contributions will be considerably below U.S. aid. For example, the next largest contributor, the EC, will provide less than half of the amount of cereal the U.S. will offer.

Aid from Japan, a country with limited agriculture but large buying power, looks promising. Japan fulfilled its 1977 pledge to double its food assistance by 1981, as the value of aid rose from $1.4 to $3.9 billion. Japan has again pledged to double its food aid by 1985, and the country's large rice surplus will help meet the goal.

Two-Edged Sword

The sluggish world economy has acted like a two-edged sword. Not only has it constrained donations, but it has also weakened low income countries' ability to earn foreign exchange through exports of raw materials and through capital investments from developed countries.

Overall, exchange earnings will probably increase only enough to leave the real buying power of low income countries fractionally above last year.

Because commodity prices will likely stay weak, countries that export sugar, tea, copper, rubber, tin, cocoa, and animal hides will have to export more to prevent earnings from falling.

"Usually, half the developing countries have agricultural trade deficits," Lanagan says. "However, because of low world prices for their export goods and the nations' dependence on imported energy, two-thirds will face deteriorating trade balances in 1982 and 1983. About 75 percent will have rising import bills."

Deficits in India, Pakistan, Egypt, Morocco, the Philippines, Colombia, and Kenya are forecast at over $1 billion each year. India's deficit alone will likely exceed $7 billion.

"With less ready cash available for purchases, many low income countries must receive increased food aid or face the choice between higher debt burdens and forgone purchases of goods other than food," Lanagan explains.

Adding to all their problems is the debt-repayment burden. While rescheduling some nations' debts may ease the strain over the next couple of years, others still face severe payment problems.

For example, 75 cents of every foreign exchange dollar brought into Togo and Sudan go to pay off debts. Costa Rica, Nicaragua, Bolivia, and Peru will spend one-third or more of their earnings to finance debts this year and the next. □

[*Based on materials provided by agricultural economist Kevin Lanagan of the International Economics Division, Economic Research Service, and on the ERS report* ***World Food Aid Needs and Availabilities, 1982.*** *For a copy of the report, write to Kevin Lanagan, Room 344 GHI Bldg., ERS, USDA, Washington, D.C. 20250.*]

AGRICULTURAL ROUNDUP

Farm Population Profile

Only about one American in 40, or 2.6 percent of the nation's population, lived on a farm in 1981, according to the latest look at the farm population by USDA's Economic Research Service and the Bureau of the Census.

The long-term decline in the number of farm residents continued during the last few years. In 1920, 30 percent of the U.S. population lived on farms, says ERS researcher Vera Banks.

Banks analyzed recent population data to present a statistical profile of farm residents and to compare their demographic, social, and economic characteristics with the nonfarm population. She found, for example, that farm residents are older, on the average, than their nonfarm counterparts.

The median age of farm residents is about 36 years, compared with 30 for the nonfarm population. About 51 percent of farm residents are 35 or older, while only 42 percent of nonfarm residents fit into this age group.

Until the last few decades, the farm population was the younger of the two. In 1920, 70 percent of farm residents were under age 35, compared with only 64 percent of nonfarm residents.

"This change results, in part, from the heavy outmigration of young adults from farms during the last generation," Banks says.

Among Banks' other findings:

• Ninety-five of every 100 farm residents are white. Among nonfarm residents, the figure is 86 percent. Blacks make up only 3.8 percent of the farm population, though they constitute 12 percent of the nonfarm group. Today, just 1 percent of the black population lives on farms, down from nearly half in 1920.

• Among adults 20 and older, farm men far outnumber women. The proportion: 107 men for every 100 women. It's the opposite in the nonfarm population where there are only 88 men for every 100 women.

• Farm residents, women particularly, are more likely to be married and living with a spouse than are nonfarm residents. This applied to 72 percent of farm women 15 and older, but only 54 percent of nonfarm women.

• Farm women bear more children than nonfarm women, based on June 1980 data. The average number of children born per 1,000 women age 18–44 was 1,813 for farm women and 1,498 for nonfarm women.

• A slightly larger proportion of farm than nonfarm residents—64 percent versus 62 percent—were in the labor force, either working or seeking work, from fall 1980 to the end of last year. But the edge extended only to farm men.

Though labor force participation grew from 30 percent of farm women to 47 percent between 1960 and 1981, this still didn't match the 51-percent participation level of nonfarm women.

• The rate of unemployment remains low in the farm population. In 1981, only 3 percent of farm residents were without jobs and looking for work. In contrast, 8 percent of the nonfarm labor force was unemployed. However, one misleading factor in lower farm unemployment figures is the frequency of dual employment on and off the farm, so that even when farmers and farmworkers lose needed off-farm jobs they are not counted among the unemployed.

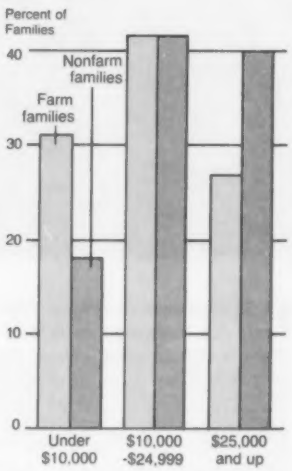
• Farm families continue to trail their nonfarm counterparts in total income. In 1980, the difference was more than $5,000 in median family income, with farm families earning $15,755 (farm and off-farm income) and nonfarm families earning $21,151. When the inflation rate is figured in, both groups suffered declines in real income from 1979 to 1980, though farm families were hit hardest.

Farm Residents Are Older, Have Fewer Women in the Labor Force, and Earn Less Income Than Nonfarm Residents

	Farm population	Nonfarm population
Median age	36	30
Percent white	95%	86%
Males per 100 females[1]	107	88
Percent of women married and living with husband[2]	72%	54%
Number of children born per 1,000 women[3]	1,813	1,498
Percent of women in labor force	47%	51%
Percent unemployment	3%	8%
Median family income, 1980	$15,755	$21,151

[1]Age 20 and over. [2]Age 15 and over. [3]Age 18–44.

Nearly a Third of Farm Families Earn Less Than $10,000*



* Total annual income from all sources, 1980.

Back to Barter

The United States has renewed a food export practice it followed during the 1950's and 1960's—bartering surplus agricultural commodities for strategic materials.

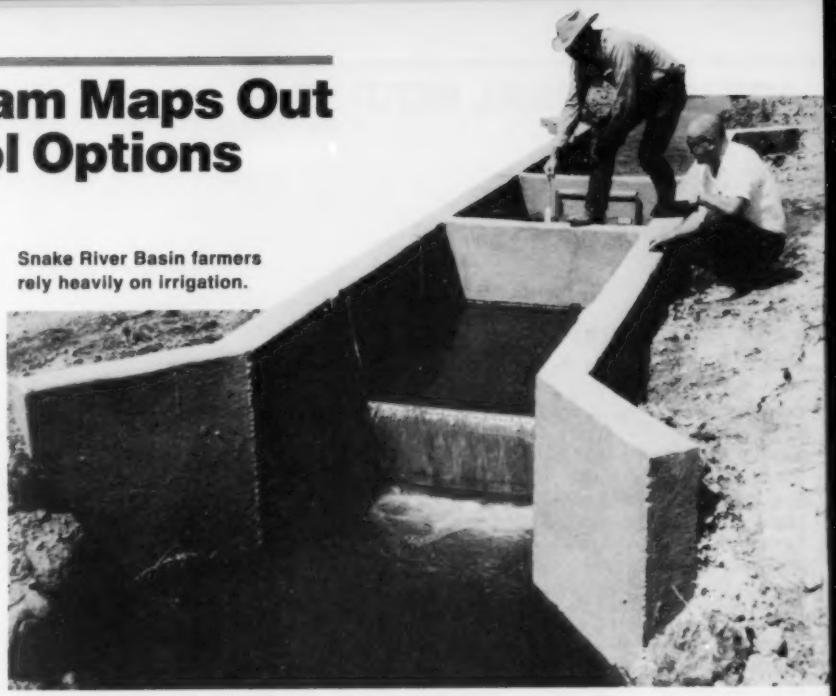
Under a new barter arrangement with Jamaica, the Federal Emergency Management Agency is to procure about 1.6 million tons of metal-grade bauxite through cash purchases and an exchange of stockpiled surplus materials, including $13 million worth of U.S. dairy products. The dairy products account for about a fourth of the total value involved in the exchange.

The United States is limited by law in the commodities it can barter, because support programs require that surplus wheat and corn be sold at prices above current export prices. Besides dairy products, the United States can barter barley, sorghum, rye, sugar beets, cotton, and honey.

River Basin Team Maps Out Erosion Control Options

Erosion is reduced by chiseling stubble into soil.

Snake River Basin farmers rely heavily on irrigation.



If $365 million seems a high price to pay for keeping the soil in place in Idaho's Middle Snake River Basin, benefits worth an average of $83.1 million annually over the next 20 years should yield a net return of about $33 million a year.

That's the bottom-line assessment of Economic Research Service specialists who analyzed economic aspects of a plan devised under USDA's Cooperative River Basin Program at the request of Idaho officials.

Far outweighing the $49.8 million in annual erosion control costs entailed in the plan are net benefits valued at $83.1 million in such areas as improved agricultural and timber production over levels projected if erosion isn't checked.

The Cooperative River Basin Program, directed by USDA's Soil Conservation Service (SCS) with participation by ERS and Forest Service (FS), offers such erosion control expertise to any state or local government who requests it.

The nearly completed study, which includes alternatives to allow decisionmakers to weigh environmental and economic priorities, will be presented to the state of Idaho and local conservation districts for their consideration.

Implementation of the proposal will depend on acceptance by individual landowners, and on the availability of additional state and federal funding. No timetable for implementation has yet been set.

Protecting Forestland

Dollars aside, the proposal would greatly reduce erosion, thus protecting forestland and preserving recreational benefits in the area which encompasses 22,000 square miles—14 million acres.

Dollars aside, the Middle Snake River Basin proposal would greatly reduce erosion.

The federal government has a special stake because it owns or controls about 9.6 million acres. Local and state governments own another million acres. The privately-held acreage hosts a third of Idaho's population, including Boise, the state capital.

Soil erosion—mostly due to water runoff—has become a major concern. Currently, almost 6.9 million tons of soil are lost to erosion each year, with almost 3 million tons of it entering rivers and streams as sediment.

More than half of the 1 million acres of irrigated cropland—the most valuable acreage in the Basin—now suffer a soil loss exceeding what SCS calls "T-value," or tolerable losses. Damage is especially severe on nearly 200,000 acres.

While the loss of fertile soil damages cropland, its accumulation in streams as sediment fouls water recreation and fishing by clogging reservoirs and channels. Sediment from cropland also carries chemicals that pollute the water.

The timber industry is also concerned. Production of new timber in the 3 million acres of commercial forestland hasn't kept up with the rate of harvesting, so improved forest management will be needed to replenish supplies. Although erosion is less a problem in forests than in cropland, damage is severe along roads and trails carved out for timber harvesting.

Given these problems, the USDA study team began developing plans in 1978 after being contacted by Idaho officials.

Development of the plan required collection of data on land use, soil types, erosion hazards, and on current erosion control, irrigation, and other types of land and water management practices. Much of the data were available from published soil and forestry surveys, farm budgets, and other reports, but some on-site work by engineers, soil conservationists, and foresters was necessary.

Swirling river chews away Idaho farm.

Surface irrigation can cause substantial soil and water loss.

From this data, the study team calculated current and projected levels of erosion, and developed estimates of costs and benefits of achieving their objectives relating to erosion control, food and fiber production, and outdoor recreational opportunities.

Seeking Practical Application

In devising the plan, researchers tried to steer from paper to practicality. Although technology is available to reduce erosion to only a small fraction of existing losses, costs could have far exceeded benefits if researchers had looked only at erosion control, and not at economic reality.

For example, erosion losses on irrigated cropland could have been reduced an extra 11 percent by applying more intensive conservation practices. But net benefits would have been reduced some $417,000, mostly in farm income, and planners did not believe farmers would sacrifice net income to that extent. The USDA team, then, sought a practical balance of technical and economic considerations.

Plans were made for each type of land: irrigated cropland, dry cropland, rangeland, and forests. Costs were calculated for alternative measures according to economic and environmental priorities.

For example, the analysis of irrigated cropland evaluated several practices to reduce erosion, including improvement of surface irrigation methods, conversion of surface irrigation to sprinkler systems, and improved tillage practices. Various plans would reduce annual cropland erosion by 1.2 million to 1.4 million tons, and resulting sediment by 506,000 to 540,000 tons, depending on whether farm profits or environmental priorities take precedence.

After weighing economic and environmental choices, the team recommended a plan that would halve the current rate of erosion loss at an initial installation cost of $364.7 million. The average annual cost through the year 2000, including amortization of installation costs, would be $49.8 million.

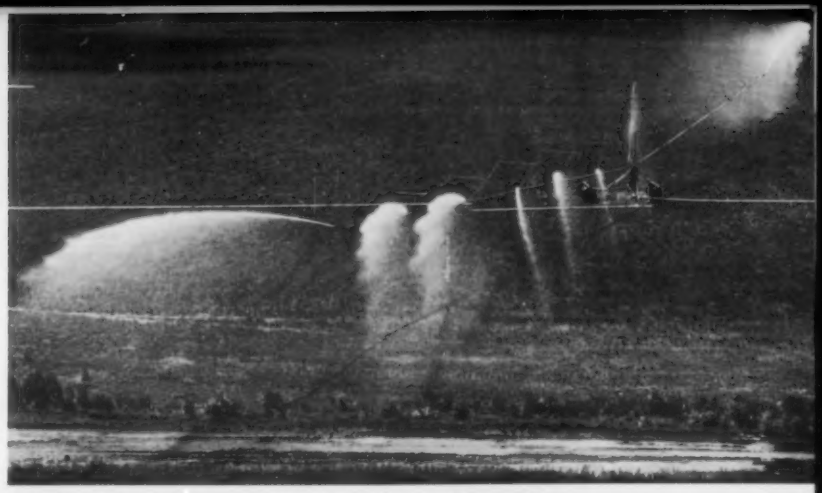
Much of the cost would be paid by farmers and other landowners, but the federal government would help them through cost-sharing programs, such as the Agricultural Conservation Program. And, of course, the federal government would be wholly responsible for preservation on federally owned lands such as the national forests.

The Payoff

On the other side of the ledger, the monetary payoff is huge, even considering that not all the $83.1 million a year in benefits translate into hard cash. In fact, much of the gain comes from cutting projected losses due to erosion, not increasing today's land profitability.

The cost-versus-benefit balance varies considerably with the type of land. The net benefit would be almost $10 million—$23.5 million in benefits minus $13.8 million in costs—for irrigated cropland, while the rangeland costs-

Irrigation on slope causes deep erosion near Caldwell, Idaho.



Sprinkler irrigation causes less erosion than surface systems.

Forestland erosion is heavy around logging trails.

An estimated 300 tons of soil per acre were lost in this section.

versus-benefits balance is nearly even: $15.9 million in benefits minus $15.8 million in costs.

To focus on irrigated cropland, erosion now strips almost 2.7 million tons of soil annually. This is a real cost to farmers in terms of rising input costs to replace lost soil nutrients, higher machinery costs to work eroded land, and lower crop yields due to soil depletion.

Without the USDA plan, losses would taper off slightly to 2.3 million tons annually. Some decline in erosion can be expected through current levels of SCS assistance, but the USDA plan would provide far more help. Losses with the plan are projected at 915,000 tons annually through the year 2000.

While protecting productivity, the reduction in cropland erosion would also cut irrigation costs by slowing return flows. In addition, recreational benefits would accrue, water quality would improve as sediment and chemical runoff dropped, and woodlands would be preserved.

Much of the cost would have to be paid by landowners, but federal cost-sharing programs should help.

Reducing rangeland erosion would also have cash payoffs. Since use of cover crops is a major element in rangeland erosion control, a side benefit is increased forage for cattle. Forage production is measured in animal unit months (AUM)—the amount of forage needed to support a mature cow for 1 month. With the plan, forage production would increase more than 1 million AUM on the 3.9 million acres affected. This means the land could support more cattle and, in turn, could contribute to higher red meat production.

Although federal, state, and local governments control three-fourths of the land, private owners will face a disproportionately large share of costs and responsibility because they control the most valuable land.

Implementation costs for erosion control on irrigated land would average about $13 per acre annually, compared with $6.70 for dry cropland, and $1.64 an acre for rangeland.

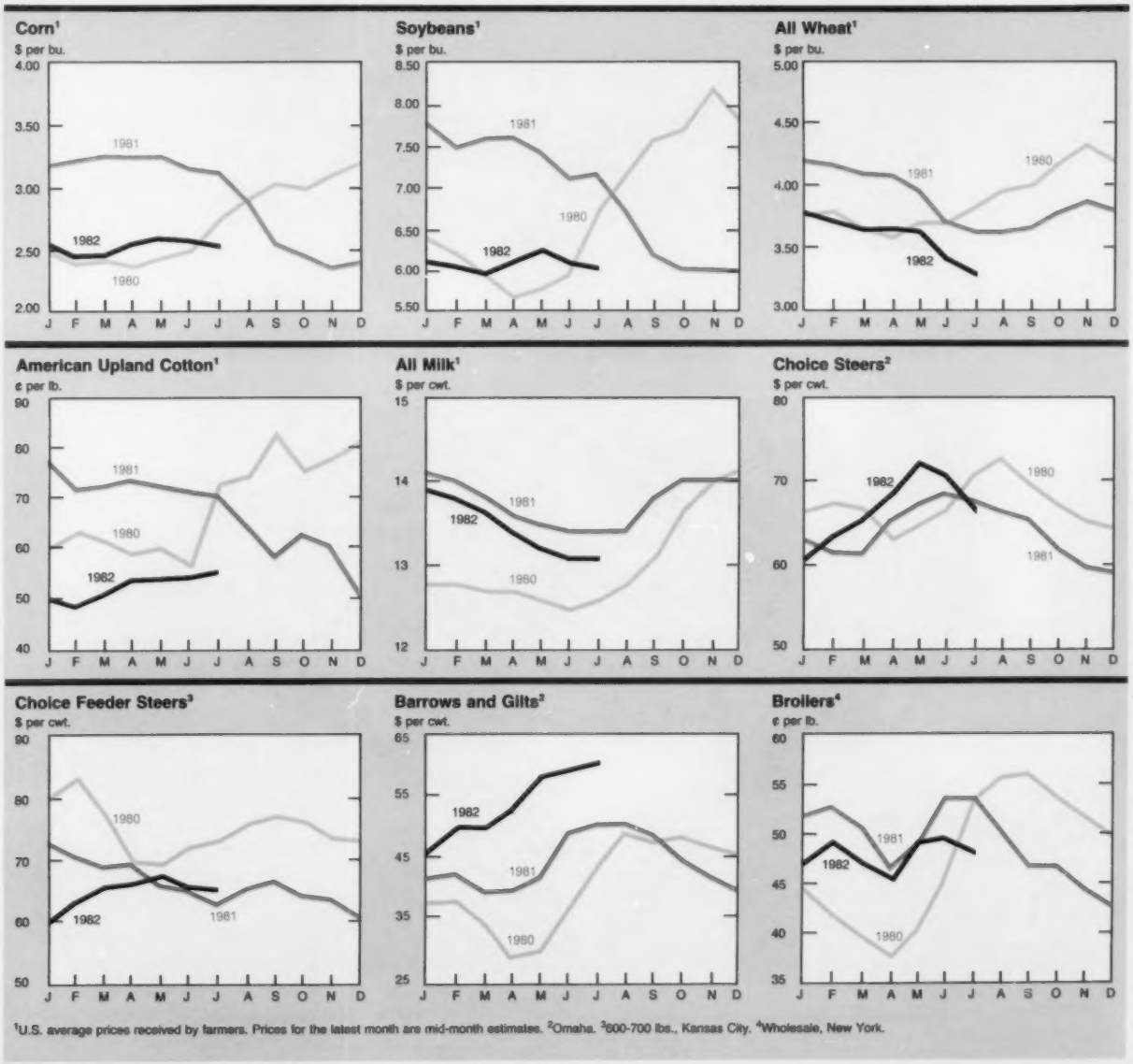
Even so, technical and financial assistance would be available to individuals and state and local governments through various USDA programs. Loans for soil and water conservation measures by individual farmers or nonprofit corporations or groups of farmers are available through the Farmers Home Administration.□

[*Written by economist William Heneberry of the Natural Resource Economics Division of the Economic Research Service.*]

FARMLINE TRENDS

Monthly Price Monitor

July crop prices declined for corn, soybeans, and wheat, but rose for cotton. In the livestock area, prices dropped for Choice steers, feeder steers, and broilers; held steady for milk; and increased for barrows and gilts. Since January, wheat prices have declined 49¢ a bushel, while milk prices have dropped 80¢ a cwt. Prices for cotton and barrows and gilts have been rising since January, with barrows and gilts topping $60 per cwt. in July. July prices for all commodities, except feeder steers and barrows and gilts, were below year-earlier levels.



[1]U.S. average prices received by farmers. Prices for the latest month are mid-month estimates. [2]Omaha. [3]600-700 lbs., Kansas City. [4]Wholesale, New York.

United States
Department of Agriculture

Washington, D.C.
20250

OFFICIAL BUSINESS
Penalty for Private Use, $300

Postage and Fees Paid
United States
Department of Agriculture
AGR-101

Third Class Bulk

To stop mailing ☐ or to change your address ☐ send mailing label on this magazine and new address to *FARMLINE*, Rm. 400 GHI Bldg., USDA, Washington, D.C. 20250.

* FRMLNSERIA300SJISSDUE005R 1 *
* SERIALS PROCESSING *
* UNIV MICROFILMS INTL *
* 300 N ZEEB RD *
* ANN ARBOR MI 48106 *

FARMERS'
900 NEWSLINE
Call the FARMERS'—900—NEWSLINE for the latest U.S. and world crop, livestock, export, and economic news from USDA. A 60-second summary is available to you 7 days a week, 24 hours a day. Your cost is 50 cents per call. The news items and special features are updated at 4 p.m., Washington, D.C. time.
The FARMERS'—900—NEWSLINE keeps you on top of the latest agricultural estimates and analysis from USDA.
900-976-0404